



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,749	01/08/2004	Sze Wei Fung	P592	1748
23586	7590	10/05/2005	EXAMINER	
ROBERT E MALM 16624 PEQUENO PLACE PACIFIC PALISADES, CA 90272			HAN, YOUNGHUIE JESSICA	
			ART UNIT	PAPER NUMBER
			2838	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/707,749	Applicant(s) FUNG ET AL.	
	Examiner Y. J. Han	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 9-19 is/are rejected.
- 7) ☒ Claim(s) 5-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 3-4, 12-19 are objected to because of the following informalities:

In claim 3, the phrase “after being either higher or lower” renders the claims indefinite because it is unclear what is being implied.

In claim 12, “the current blocker” lacks proper antecedent basis.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Taguchi et al (5,847,941).

Taguchi et al discloses a power converter (see figure 8) operating separately or as one of a plurality which supplies power to a load (10) utilizing power from a dc source (1), only one of the plurality of power converters supplying current to the load at any one time, the power converter comprising: a transformer (2) having a primary winding (2A) and a secondary winding (2B), one end of the primary winding terminating in a power terminal (the transformer 2 comprises primary and secondary windings---the primary winding has a first end connected to the positive terminal of the dc power source 1, and a second end connected to the first terminal of the switching device 3) and the other end in a reference terminal; a primary switch (3) having a switched terminal, a reference terminal, and a control terminal, the primary switch being off

Art Unit: 2838

and the switched terminal being disconnected from the reference terminal when a switch-off voltage is applied to the control terminal, the primary switch being on and the switched terminal being connected to the reference terminal when a switch-on voltage is applied to the control terminal, the switched terminal being connected to the reference terminal of the primary winding, power being applied to the power converter by connections to the power terminal of the primary winding of the transformer and the reference terminal of the primary switch, the secondary winding of the transformer being the source of output power from the power converter; a capacitor (12') connected in parallel with either the primary winding or the primary switch; a controller (13) having a voltage output terminal and a reference terminal, the voltage output terminal being connected to the control terminal of the primary switch and the reference terminal being connected to the reference terminal of the primary switch, the controller alternately supplying the switch-off voltage and the switch-on voltage at the voltage output terminal; wherein the controller includes a first control terminal, the controller utilizing the voltage appearing on the first control terminal to determine when to change the voltage on the voltage output terminal from the switch-off value to the switch-on value, the first control terminal being connected to the switched terminal of the primary switch; wherein the controller changes voltages when the voltage on the switched terminal equals the voltage on the reference terminal after being either higher or lower; wherein the controller changes voltages when the voltage on the switched terminal equals the voltage on the reference terminal after the voltage on the voltage output terminal has been changed from the switch-on value to the switch-off value.

Taguchi et al further discloses a current blocker (6) connected in series with the secondary winding of the transformer, the current blocker preventing the flow of current through the

Art Unit: 2838

secondary winding when the primary switch is off; wherein the current blocker is a diode (6), the diode being reverse-biased when the secondary winding and the diode are connected to a load and the primary switch is off; wherein the current blocker is a switch (3), the controller (13) controlling the on/off state of the switch by supplying a control voltage to the switch.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taguchi et al (5,847,941) in view of Cross (5,795,595).

Taguchi et al discloses the invention substantially as claimed but does not disclose a second converter connected in parallel so that power is alternately supplied. Cross, however, clearly discloses that two power converters coupled in parallel and are operated 180 degrees out of phase with one another is well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art to employ second converter in Taguchi et al, as taught by Cross, to obtain the claimed invention for the purpose of achieving highly efficient and compact converter that minimizes heat dissipation by alternating voltage source.

6. Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taguchi et al (5,847,941) as modified by Cross (5,795,595) as applied to claims 12-15 above, and further in view of Aiello et al (6,301,130).

Art Unit: 2838

Taguchi et al, as modified by Cross, discloses the invention substantially as claimed but does not disclose dc-ac inverter having four switches arranged in bridge configuration for regulating output voltage. Aiello et al, however, clearly teaches that the use of inverter having H-bridge semiconductor switch utilizing power transistors such as IGBTs is well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art to employ H-bridge inverter in Taguchi et al, as modified by Cross, to obtain the claimed invention for the purpose of selectively regulating output voltage when multiple power is used for output.

Allowable Subject Matter

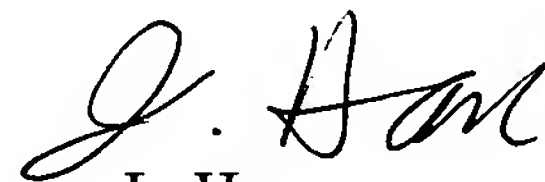
7. Claims 5-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Y. J. Han whose telephone number is 571-272-2078. The examiner can normally be reached on Mon-Fri 5:30am-2:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2838

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J. Han
Primary Examiner
Art Unit 2838